FOR REFERENCE ONLY

42″ HD Gas Plasma Display
Technical Manual

www.rosenaviation.com

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Table of Contents

INTRODUCTION 3

SAFETY 4

- General Safety 4
- Physical Safety 4
- Electromagnetic Compatibility (EMC) 4
- Design Safety 4

GETTING STARTED 5

- Unpacking 5
- Pre-installation 5

INSTALLATION AND CONNECTION 6

- Installation Warnings 6
- Operator Interface Connections 7
- DVI (Digital Visual Interface) 8
- Analog RGB Input (Computer) 8
- Analog RGB Used as Component Video (YPrPb) 8
- HDTV Component Video (YPbPr.2) 8
- YPrPb.2 Used as Computer Analog RGB with Sync on Green 8
- S-Video and S-Video.A 9
- Composite Video 9
- Standard-Interlaced TV (STV) Component Video (YPbPr.1) 9
- Computer Control (RS-232) 9
- Interface Options 9

INPUT POWER AND GROUND CONNECTIONS 10

- Ground Stud Connections 10
- AC Power Connections 10

OPERATOR CONTROLS AND INDICATORS 10

- IR Code Switch 10
- Infrared Remote Control 10
- Remote Infrared Sensor 10

UNIT OPERATION 11

- Remote Power On/Off 11
- On Screen Display (OSD) 11
- Source Selection 11
- IR Universal Remote Control Discrete Commands (Direct IR) 11
- Analog RGB/DVI Modes 12
- Baseband Video Modes (Composite, Component, S-Video) 12
- FlexiScreen™ Scaler 12
  - *Using the FlexiScreen™ Scaler 12*
  - *Display Aspect Ratio Selections 13*
  - *Source Aperture Selections 13*
- PIP Modes 14
- Picture by Picture 15
- Saving Settings 15
- Brightness Adjustments 15
- Contrast Adjustments 15
- Hue Adjustments 15
- Color Adjustments 15
- Display Setup 15

Instant On *16*
OSD Background *16*
Freeze *16*
Color Gamma *16*
Input Port Enable *16*
Direct IR Setup *16*

CARE AND MAINTENANCE **17**

SCREEN CLEANING **17**
AIR VENT CLEANING **17**
FUSES **17**
RECOMMENDATION FOR SCREEN SAVER **17**
OPERATOR TROUBLESHOOTING **18**
SERVICE AND SUPPORT **19**
PACKAGING AND SHIPPING **19**

APPENDIX A: PACKING FOR SHIPMENT **20**

APPENDIX B: REMOTE CONTROL OPERATION OVERVIEW **22**

APPENDIX C: OSD MENU STRUCTURE & COMMANDS **30**

APPENDIX D: CONFIGURATION AND PERFORMANCE OVERVIEW **38**

SPECIFICATIONS **38**
USER INTERFACES **38**
PIP (MULTIPLE SCENARIO) **38**
REAL TIME DIGITAL SIGNAL PROCESSING **38**
ELECTRICAL AND ENVIRONMENTAL **38**
MECHANICAL **39**

APPENDIX E: DEFINITION OF TERMS **40**

WARRANTY EXCLUSIONS **41**

OUTLINE DRAWINGS **42**

Introduction

Congratulations! You have purchased the world's most advanced and highest resolution 42" HD gas plasma display with built-in motion adaptive line doubler/scalar and multiple high definition television (HDTV) direct inputs. You have wisely invested by choosing to use a digital plasma display. In addition, there are up to 8 video inputs and multiple picture-in-picture (PIP) scenarios.

The picture quality of your gas plasma display system is the best in its class for analog or digital video presentation. The images produced by this plasma display system are stunning – providing movie-film clarity with very black blacks, very white whites, true-to-life skin tones – and also giving a perception of looking through the screen, rather than at it. There is no better match to DVD and HDTV systems.

This unit contains the most comprehensive image enhancement settings available for plasma displays through an intuitive, user friendly on-screen display (OSD). The OSD can be accessed by either the infrared universal remote control (IR) supplied with your system, or by an RS-232 connection. The IR has single pushbutton direct access to source selections, scalar control, PIP control, and power on/off.

In addition, the 42" HD gas plasma display's digital video converter (DVC) incorporates an advanced scalar that provides virtually unlimited zoom and pan capabilities. User prescribed scalar presets are provided to allow quick and simple full-screen viewing with common widescreen and anamorphic picture formats. The scalar incorporates motion-adaptive processing to preserve picture focus and smooth movement over a wide range of image conditions.

The HDTV-direct inputs incorporate proprietary adaptive component video conversion interface:

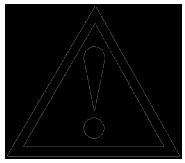
- Directly operates with 480i or 480p and up to 1080i
- Operates with either bi-level or tri-level syncs
- Operates with RGBHV VESA levels, including the Direct TV HD-DSS system
- Wide signal level and offset adaptability

This manual emphasizes safety, to both the user and the equipment. This display, although the lightest and thinnest in its class, is designed with ruggedness and capability for high reliability. However, unless the user understands how the equipment is to be handled and operated, full benefits of this system's superior design and safety features may not be realized. Please read this manual to fully understand the capabilities of the 42" HD gas plasma display system.

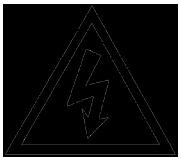
Safety

General Safety

Caution

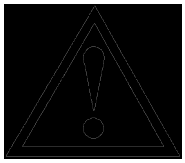


Use the three-prong AC power cord supplied with the unit to ensure that proper ground connection is maintained. A safety ground lug is also provided on the unit and should be used in accordance with your local electrical code. Failure to provide a proper ground from the installation's power source may result in injury to personnel and serious damage to the unit that would not be covered under warranty.

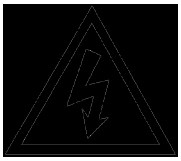


Physical Safety

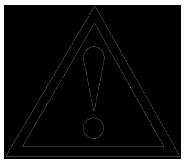
Caution



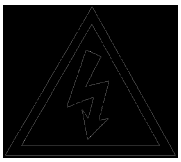
To reduce the risk of electric shock, do not remove any covers from the display. Refer servicing to an authorized distributor or factory trained service technician.



Warning



To avoid the risk of fire and electric shock, do not expose this product to corrosive environments including ocean spray, rain, or moisture; do not allow water or other liquids in the unit. Exposure to such environments can cause serious damage to the unit that would not be covered under warranty.



Electromagnetic Compatibility (EMC)

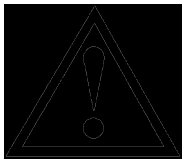
This Equipment has been designed to meet the requirements of F.C.C. part 15 and CE Directive 89/336/EEC with applicable harmonized standard EN-55022. These requirements are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. *Installation and Connection* on page 6 of this manual lists installation guidelines for the 42" HD gas plasma display to be FCC and CE compliant. If this system is not installed and used in accordance with the instruction manual, it may cause interference to radio communications.

Design Safety

This Equipment has been designed in accordance with the safety and material guidelines set forth in CSA/UL 1950. Most of the materials are CSA/UL listed. The display has been designed with a special glass front filter to minimize the risk of shattering, if broken. For additional information on the safety verification status of this equipment, refer to *Installation and Connection* (page 6).

Getting Started

Unpacking



Caution

Extreme caution should be taken when unpacking the digital monitor. It has been designed for rugged use; however the display monitor contains glass that could break if dropped. Appendix A (page 20) shows how the 42" HD gas plasma display was packaged for shipment. This will guide your efforts to unpack the system.

Carefully remove all components of the display from the packaging. Place the display face (glass side) down on a soft, flat surface for ease of installation.

***Note**: The original packaging materials should be kept in case of service or relocation. Replacement packaging may be purchased from the factory. When the 42" HD digital display is installed and operating properly, please store this manual in a safe place for future reference.*

Pre-installation

Figure 1 shows the pieces included with your new digital display. Please check the equipment included in this shipment to confirm that the pieces shown are included. If they are not, then please contact your dealer or distributor immediately.

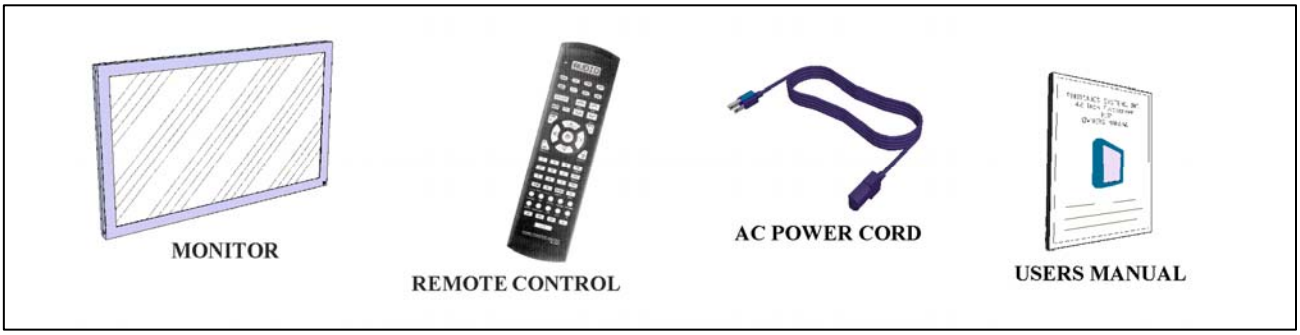


Figure 1

***Note**: the IR remote control may be a different style than shown in Figure 1. Remote control information is included in Appendix B on page 22.*

Installation and Connection

Installation Warnings

The display unit shall be handled by at least two persons during installation and moving.

The display should be operated only when proper connection has been made to the grounding stud provided on the unit.

Mounting the unit in any orientation with installer/user supplied mounting hardware is totally the installer/user's responsibility and liability.

Removal of the front bezel is strictly prohibited.

Exposure of the product to corrosive environments including ocean spray, rain or moisture, or allowing water or other liquids to enter the unit shall void warranty.

Installation of the 42" HD gas plasma display into any aviation or mobile application must be as specified in the applicable installation drawings. Any provided applicable addenda to this manual for installation and/or maintenance must also be followed.

The display is cooled using air vents. Air vents must be open to free air in order to function properly. The display must be installed with at least 1 inch of clearance above and below the unit.

Failure to observe the safety configuration of the product and handle accordingly shall void warranty.

Operator Interface Connections

All operator connectors are located at the rear of the unit. Only one video source is required for your new 42" HD gas plasma display. However, multiple video sources can be connected at the same time.

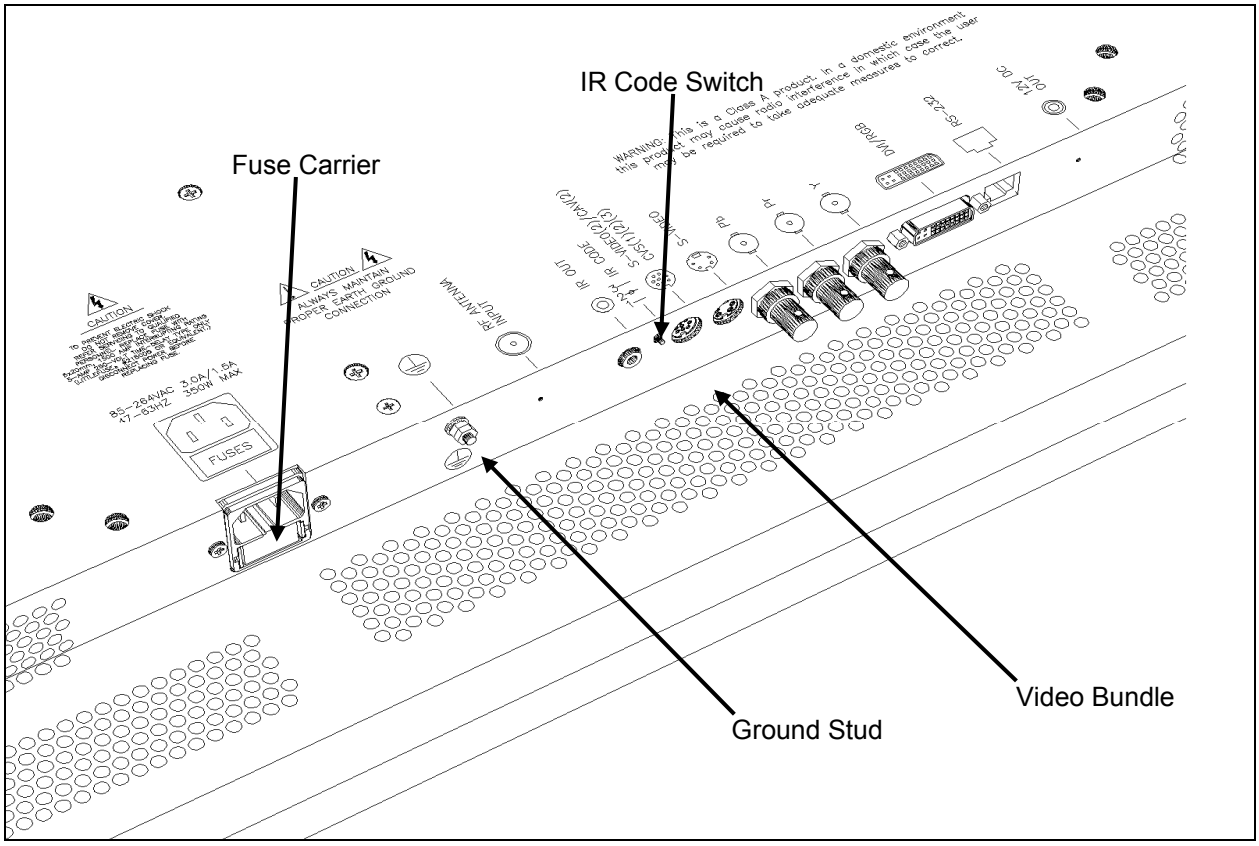


Figure 2

Up to 8 Video Inputs:

INPUT	CONNECTOR TYPE	DESCRIPTION	BANDWIDTH
DVI	DVI 1.0	Computer Digital RGB	Up to 60Hz 768p
RGB	DVI 1.0/HDB15	Computer RGB or DTV/HDTV Component	Up to 60Hz 768p
YPbPr	3 BNCs	DTV/HDTV Component	Up to 60Hz 768p or 30Hz 1080i
S-Video	DIN4	NTSC/PAL Baseband	Interlaced STV
S-Video A (*)	DIN4	NTSC/PAL Baseband	Interlaced STV
Composite (* and **)	RCA	NTSC/PAL Baseband	Interlaced STV
Composite (* and **)	RCA	NTSC/PAL Baseband	Interlaced STV
Composite (* and **)	RCA	NTSC/PAL Baseband	Interlaced STV

NOTE: A Source cannot be selected from the OSD unless it has been enabled.
See *Input Port Enable* on page 16.

* With Video Bundle Accessory

** Three composite inputs can be replaced by one component input with interlaced STV bandwidth.
Note: When connecting a video source to the display unit, keep in mind that a higher quality cable will result in better picture quality.

DVI (Digital Visual Interface)
If your new display is being used with a computer with DVI output, connect a DVI cable to this connector location and the other end to your computer. Your cable should not be longer than necessary.

Analog RGB Input (Computer)
If your new display is being used with a computer that has only a VGA output, connect a VGA cable with a DVI-Analog connector to this DVI/RGB connector location (see Figure 2 on page 7), and connect the other end to your computer's VGA feature connector. Your cable should not be longer than necessary.

Analog RGB Used as Component Video (YPrPb)
With the use of proper cabling as shown in Figure 3, the unit can also be set up to accept HDTV component video (YPrPb) on the analog RGB input. Adjustments on the OSD are also needed. Under Source Setup, HDTV Input should be turned ON and Color Space should be changed to YUV HD. The remote control and OSD arrangements for this configuration are described in more detail in Appendices B and C (pages 22 and 30).

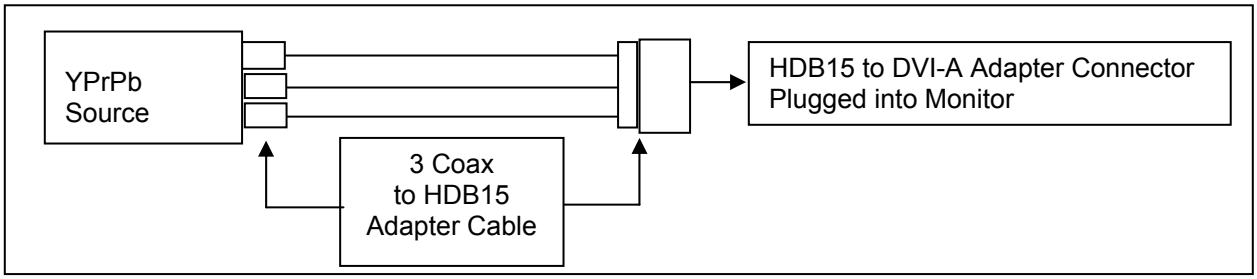


Figure 3

HDTV Component Video (YPbPr.2)
If your new display is to be used with a video source that uses HDTV Component Video interconnection, connect your BNC cables to the BNC connectors labeled Y, Pr, and Pb.

YPrPb.2 Used as Computer Analog RGB with Sync on Green
With the use of proper cabling as shown in Figure 4, the unit can also be set up to accept computer analog RGB with sync on Green. Under Source Setup, HDTV Input should be turned OFF and Color Space should be changed to RGB. The remote control and OSD arrangements for this configuration are described in more detail in Appendices B and C (pages 22 and 30).

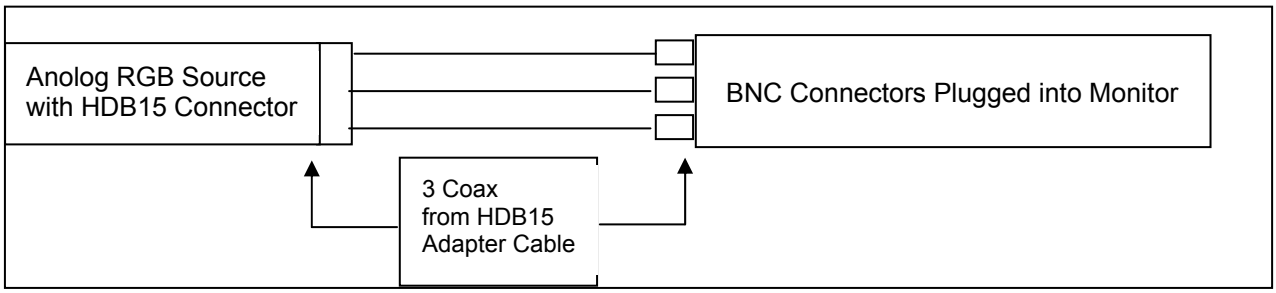


Figure 4

S-Video and S-Video.A

If the display is to be used with a video source that uses the S-Video type of interconnection, connect the 4-pin mini-DIN connector to this connector location, or to the video bundle's S-Video.A 4-pin mini-DIN connection (see video bundle in Figure 5). This cable should not be longer than necessary.

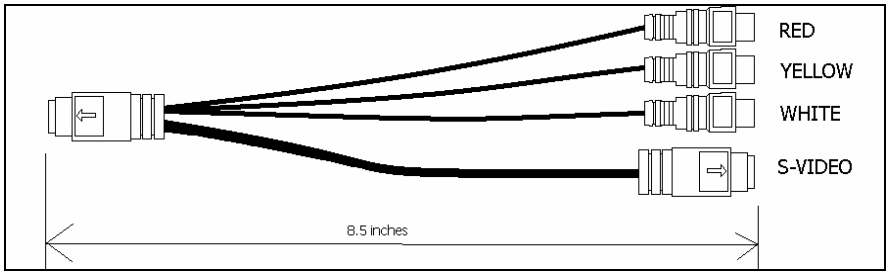


Figure 5

Composite Video

NOTE: A Source cannot be selected from the OSD unless it has been enabled and saved. See *Input Port Enable* on page 16.

If the display is to be used with a standard video source, connect a video quality cable with a RCA connector via the video bundle to this connector location. An alternative is to purchase a BNC to Phono (RCA) adapter and use a BNC cable between the video source and the video bundle.

***Note**: There are up to 3 composite inputs available to the user via the video bundle. If any of the composite inputs are used on the video bundle, then the standard-interlaced TV (STV) component video input will be unavailable to the user.*

Standard-Interlaced TV (STV) Component Video (YPbPr.1)

If the display is to be used with a CAV video source, connect video quality cables with RCA connectors via the video bundle to this source. An alternative is to purchase BNC to Phono (RCA) adapters and use BNC cables between the video source and the video bundle.

***Note**: Y is connected to yellow, Pb is connected to white, and Pr is connected to red. If the component inputs are used on the video bundle, then the STV composite video inputs will be unavailable to the user.*

Computer Control (RS-232)

This RJ45 connector is for advanced computer control without using the infrared remote control. All of the remote functions are available through this connector with additional controls available. Appendix B (page 22) provides full details on the RS-232 remote control including the cable/connector details.

Interface Options

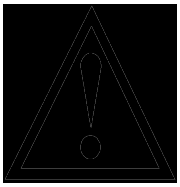
If your unit was ordered with certain interface options, these may be included as follows:

IR Out: This optional output provides wideband, universal remote control repeater compatibility.

RF Antenna Input: Not Used.

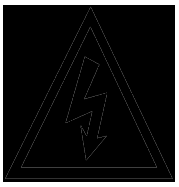
12VDC Out: Output for certain add-on external options that require 12VDC.

Input Power and Ground Connections



Caution

Ensure that the AC power cord is disconnected from the AC power source before performing the following steps.



Ground Stud Connections
The back of the display has a ground stud that must be connected to an earth ground (see Figure 2 on page 7). It is the installer's responsibility to determine the local code for materials and dimensional requirements for lug size, wire size, length and location of the earth ground connections in the installation.

AC Power Connections
Place the power cord into the back of the unit. Do not connect the power to your wall plug at this time.

Operator Controls and Indicators

IR Code Switch
On the back of the unit (see Figure 2 on page 7) is a switch labeled IR CODE that is located between the video bundle input and IR output. It should be in the full down position as set at the factory. The IR remote control supplied with your unit has been preprogrammed to operate the OSD with the switch in this position. If you want to change IR codes to avoid interference from other IR remote controls, you can select a different switch setting and reprogram the IR to a different code set. See the information provided with the IR remote control supplied with your unit for code-set and code-switch settings. For additional information, refer to Appendix B on page 22.

Infrared Remote Control
The infrared remote control supplied with your new 42" HD gas plasma display is the main user control for the system. It can access all the capabilities of your display. For full details including the OSD, see Appendix B (page 22) and Appendix C (page 30). The summary functions available via remote control are described in the following section on unit operation.

Remote Infrared Sensor
The remote control infrared sensor is located on the front of the display. As you are looking at the front of the display, the sensor is located in the lower right hand corner of the frame as shown in Figure 6. You will obtain the best performance from the remote control if you aim it at this sensor.

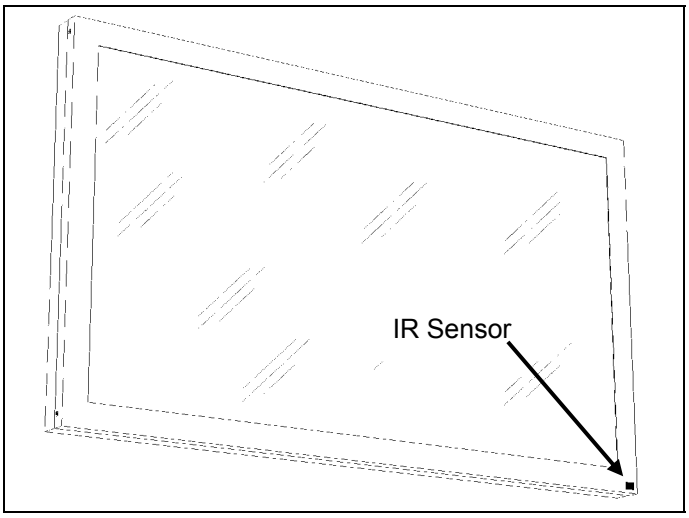


Figure 6

Unit Operation

After the installation is complete, plug the main power cord into the specified voltage outlet. The unit has been set up at the factory so that it will turn on in the standby mode.

Remote Power On/Off

The remote control has a function that will only enable and disable the display's screen (for example: standby mode). The unit will remain in the standby mode when the display screen is disabled by remote control. In this mode, the fans will not operate, and the unit will draw only a few watts of power. The unit can be enabled again by using the IR, or by RS232 command.

On Screen Display (OSD)

Invoking the OSD will access the system controls, which are fully detailed in Appendix C (page 30). The primary system control functions or modes are summarized in the following paragraphs.

Source Selection

Source selection by the remote control, in most installations, will only have to be performed one time. Once you select the source: Computer RGB (VGA), Composite.Y, Composite.R, Composite.W, S-Video, S-Video.A, YPbPr.1, YPbPr.2, or DVI, the system will remember your source and you will not have to re-select it.

If you are using more than one source for video, you will have to change between the different sources. The unit will always remember your last video source selection when enabled from standby. However, if the unit is powered down improperly (for example: AC power is removed), then the video source selection last saved by RS232 or the OSD's SAVE selection will be remembered and shown on the screen at power-up.

IR Universal Remote Control Discrete Commands (Direct IR)

Regardless of which menu the user is viewing, pressing one of the discrete command buttons on the IR causes a corresponding immediate action. These discrete command buttons are detailed in Appendices B and C, and are set up at the factory as defaults. However, they are programmable through OSD menus. The Direct IR Menu is accessible

as factory default discrete command button 9. The user can immediately recall the discrete command button assignments by pushing 9 on the IR.

***Note**: This assumes that the user has not changed this particular factory default.*

Analog RGB/DVI Modes

Once the VGA/SVGA mode is invoked by selecting the VGA source, menu selections are available for adjusting color, contrast, brightness and interface synchronization as well as FlexiScreen™ control. After selecting a menu function, the OSD presents a bar and a value for your reference while performing the adjustment or function control.

Baseband Video Modes (Composite, Component, S-Video)

When a baseband video mode is invoked by selecting one of the baseband video sources, menu selections are available for adjusting color, contrast, brightness and interface variables as well as FlexiScreen™ control. After selecting a menu function, the OSD presents a bar and a value for your reference while performing the adjustment or function control.

FlexiScreen™ Scaler

FlexiScreen™ controls image sizing and positioning on the display screen for each of the sources provided.

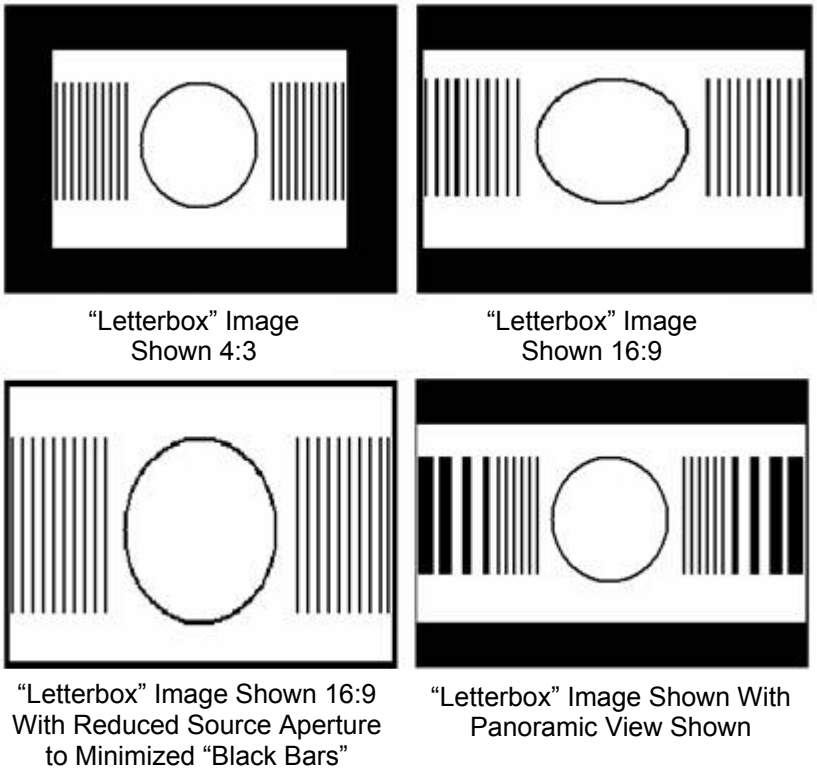
Using the FlexiScreen™ Scaler

The goal of FlexiScreen™ is to enhance the viewing experience by allowing the user to tailor the image to their liking. Factory preset formats of the more popular settings are provided per source input. These format settings target a wide range of media formats and allow the user to create their ideal image. Follow the quick and easy steps listed below to customize the image using the FlexiScreen™. The steps are organized as a top-down approach; begin at the top of the list and work down. Any time the image becomes satisfactory, abort the steps and exit the OSD menu with a save. Saving the settings to memory will preserve the configuration for the future.

- With the desired source input selected, bring up the FlexiScreen menu.
- Choose a predefined source format that best fits the source image to the screen.
- Verify the following:
  - The Display Aspect Ratio ("Disp Aspect") setting fills the screen appropriately.
  - The choices are arranged by popular film mastering formats.
  - The four remaining settings are the discrete parameters that make up the actual source aperture used by the built-in scalar.
    Height and width along with the horizontal and vertical offsets are provided to allow the user ultimate control. See Figures 7 and 8 for more details.
    Altering any of these four values causes the "Src:" description to read "Custom". This is provided to alert the user that the settings have been altered from factory presets.

Display Aspect Ratio Selections

- "16:9" will cause the image to fill the entire width of the display screen.
- "4:3" will cause the image to only fill a portion of the display screen to achieve a 4:3 aspect ratio.
- "1:1" (not shown below) will cause the image to fill the screen with a direct one for one pixel association with the source aperture adjustments. For example, if you chose a 600 width and a 400 height, then a 600 x 400 window should be visible on the display screen.
- "Panoramic" will cause the center of the screen to be displayed in a normal fashion and the outside 10% of the image (left and right side only) will be stretched to fit the full size of the screen.



"Letterbox" Image Shown 4:3

"Letterbox" Image Shown 16:9

"Letterbox" Image Shown 16:9 With Reduced Source Aperture to Minimized "Black Bars"

"Letterbox" Image Shown With Panoramic View Shown

Figure 7

Source Aperture Selections

Cycle through Source Aperture Selection choices to initialize the source aperture adjustments listed below. These settings identify a particular group of source aperture adjustments that have been optimized for the "widescreen" or "letterbox" type movies. Each setting targets the minimization of black bars encoded on movie media, while maintaining an inherent aspect ratio to diminish distortions. Choices are listed as film mastering formats.

Source Aperture Adjustments

Although the Source Aperture Selection initializes the source aperture, the FlexiScreen™ menu also includes provisions for manual adjustments. Height and width along with the horizontal and vertical offsets are provided to allow the user ultimate control. These settings define the boundaries of the active image showing on the display. The source aperture can be thought of as a window overlay of the source frame as shown in Figure 8. What is defined within this window makes up the active image. The best application for these functions is to crop out the black bars of a widescreen movie. There are associated source aperture adjustments for each of the source aperture settings. Altering any of these four values causes the "Src:" description to read "Custom". This is provided to alert the user that the settings have been altered from factory presets.

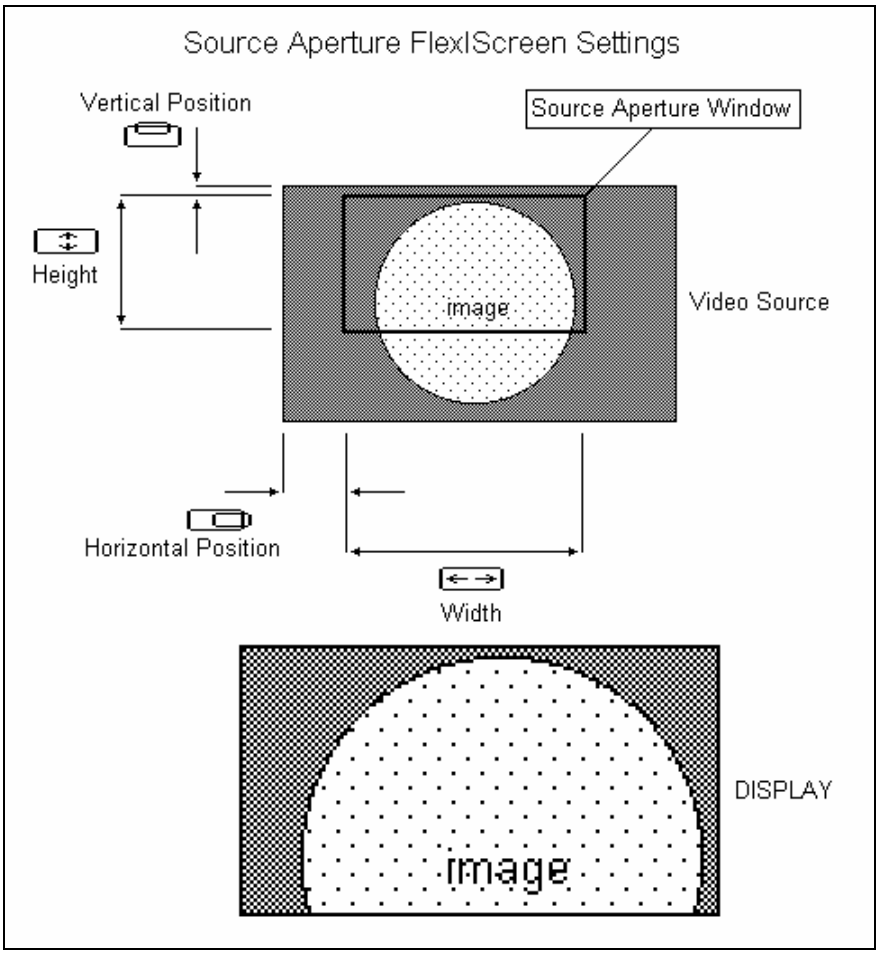


Figure 8

PIP Modes

Picture in Picture (PIP) is a feature that makes it very easy to view two different video inputs at the same time. The main display can be showing any active input while the PIP window can be activated to view another active input in many different combinations, including the main display video source (see note on following page). Many different combinations are referenced as "Multiple Scenario PIPs". One example is that while viewing the S-Video input programming, the PIP window can be set to view a HDTV input

program or vice versa. These programs can be swapped or toggled from one to the other using the remote control system or the IR (remote control: factory default direct IR command button 8).

***Note**: Figure 2 (page 7) indicates there are certain exclusions to the multiple scenario PIPs. For example, 2 video inputs sharing the same switch cannot be combined in a PIP scenario. Also note that the Flexiscreen settings do not affect PIP widow images in that the format delivered at the switch input will be displayed in the PIP window. Therefore, letterbox and widescreen formats will be displayed as such in PIP, although Flexiscreen factors will be applied to corresponding inputs on the main display.*

Picture by Picture
This is a special PIP mode in which the main picture is shown on the left side of the screen and the PIP is shown on the right side. This mode is offered to provide an unobstructed view of the main picture while a PIP is activated.

Saving Settings
If any settings have been changed, you can store the new settings so that the unit will default to these new settings automatically. This can be performed individually for each source. If you change any settings, and do not save them, the 42" HD gas plasma display will revert to the most recently saved settings when the unit is turned off.

Brightness Adjustments
The picture brightness is factory set to the middle of the range. This is normally satisfactory for most viewing. However you may want to adjust it for your specific conditions. If the brightness is turned up very high, a washout condition might appear. If this happens, simply decrease the brightness of the display. The OSD shows a bar and a value for reference while adjusting.

Contrast Adjustments
The picture contrast is factory set to the middle of the range. This is normally satisfactory for most viewing. However, you may want to adjust it for your specific conditions. The OSD shows a bar and a value for reference while adjusting.

Hue Adjustments
The picture hue is factory set to provide the most accurate color reproduction. This is normally satisfactory for most viewing. However you may want to adjust it for your specific conditions. The OSD shows a bar and a value for reference while adjusting.

Color Adjustments
The picture color is factory set to give true color representations. This is normally satisfactory for most viewing. However you may want to adjust it for your specific conditions. The OSD shows a bar and a value for reference while adjusting.

Display Setup
The display unit has many options that can be changed from the factory default to the user preferences. The display setup options are detailed on the following page.

Instant On
This setup option enables the display to turn on and show video as soon as the power is applied to the unit. If set to OFF, this option keeps the unit in the standby mode until the user enables the display via the IR remote or the RS232 control.

OSD Background
When enabled, the OSD will have a solid background. If disabled, the OSD will not have a distinctive background.

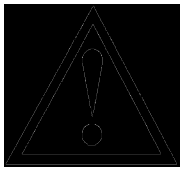
Freeze
This function enables you to freeze the image currently on the screen. Please note that this function does not pause or stop the video source, only the screen.

Color Gamma
Within the Display Setup menu is the Color Gamma adjustments. In normal situations this menu should not have to be used. However, if conditions or situations require an adjustment to the color gamma curves, this can be accomplished in this sub menu. See Appendix C (page 30) for full details.

Input Port Enable
This setup menu is very important while the unit is being installed (use in conjunction with Operator Interface Connections, beginning on page 7). The installer is required to turn on or off the unit's various inputs. This menu, once set, should normally not require further modifications after unit installation is complete. This Menu is a SMART menu in that it **will not** allow conflicting inputs to be enabled**. You must save the settings once they have been set for the installation. A source cannot be selected from the OSD unless it has been enabled and saved.**

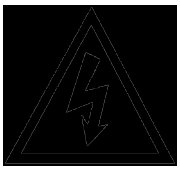
Direct IR Setup
Direct IR Setup menu is provided so that the user can customize the way the IR controls the 42" HD gas plasma display with discrete commands. See Appendix B (page 22) for full details.

Care and Maintenance



Caution

Do not allow water or other liquids to enter the unit. This can cause serious damage to the unit that would be very costly to repair. Always be sure that the AC power is turned off during cleaning.



Screen Cleaning

The screen can be cleaned using a very mild glass cleaner that is non-abrasive, and a lens grade tissue for optical surfaces. Do not spray the glass cleaner directly onto the glass. Spray the glass cleaner onto the tissue, and then clean the glass.

Air Vent Cleaning

All air vents of the display should be inspected periodically for buildup of dust or other obstructions. Such obstructions can interfere with the proper cooling of the unit causing reduced performance and reliability. Air vent obstructions can be removed by vacuuming around the air vents.

Fuses

The unit uses ONLY a 5 x 20mm, 5 Amp, 250V time-delay type fuse with a 1500 Amp interrupting rating such as Littlefuse® 215005 or equivalent. Replace fuse with same type and rating only. The fuse is located in a snap-in carrier below the input power receptacle. See Figure 2 (page 7).

Recommendation for Screen Saver

The plasma display panel in the unit incorporates phosphors. These phosphors could be damaged by prolonged display of still pictures and/or text. Therefore a screen saver program should be employed in still picture applications. Such applications especially include computer graphics. However, we often forget that some video sources such as DVD players can also put up menus and still pictures and/or text. Therefore, protect against these situations also.

Operator Troubleshooting

Category	Symptom	Check
Power	Unit does not come on	1. Input power cord connections 2. Rear line fuse 3. Power source
	Unit comes on but display does not light or have O.S.D.	1. Batteries in remote 2. Remote power on
	Remote does not work or unit will not turn on with infrared remote control	1. Replace infrared remote control batteries with new, good batteries and reprogram the remote 2. Ensure that the infrared sensor on the display is not blocked
	Display turns on with O.S.D. but does not show video	1. Enable and save the video input per *Input Port Enable* on page 16. 2. Video source 3. Video cables from the video source to the unit 4. Source selection for the display with the remote control (Refer to Remote Control commands)
All Modes	System doesn't remember changed settings	1. No settings are saved until SAVE is manually selected from within the menu. If settings are changed and not saved, the next power up will return the unit to it's previously saved parameters.
	Picture seems distorted: circles are not round—video or RGB modes	1. This is usually caused by selecting modes in the FlexiScreen menu that don't maintain pixel correlation; Select Standard or 4:3 mode to confirm
	Picture is too dark or too light	1. O.S.D. for Brightness control 2. Source for poor quality
	Picture has too much or not enough contrast	1. O.S.D. for Contrast control 2. Source for poor quality
	Picture is too high on screen	1. O.S.D. and remote control for position
	Picture is too low on screen	1. O.S.D. and remote control for position
	Picture is too far to the left of the screen	1. O.S.D. and remote control for position
	Picture is too far to the right of the screen	1. O.S.D. and remote control for position
	Picture does not have the correct height	1. O.S.D. and remote control for correct height
	Picture does not have the correct width	1. O.S.D. and remote control for correct width
Video Modes	Pictures are too green or purple	1. HUE in O.S.D.

Category	Symptom	Check
DVI, Analog RGB Mode	Screen does not sync up	1. Input settings for the computer. They should be one of the acceptable display rates listed in Appendix D (page 38)
	Blue is dim or too bright	1. O.S.D. Blue Gain Adjustment
	Green is dim or too bright	1. O.S.D. Green Gain Adjustment
	Red is dim or too bright	1. O.S.D. Red Gain Adjustment
Composite Video, S video and YPbPr.1	No sync and appearance has mixed up colors or black and white	1. O.S.D. for PAL or NTSC format, match with source format
	Picture appears to be Black and white	1. Source connection 2. Source to interface cable and connections 3. Color in O.S.D. 4. Source might be Black and White
Component Video YPbPr.2	The picture appears black and white	1. Cables from the source for proper connections, for example, y to y 2. Color in O.S.D. 3. Source might be Black and White
	The colors are wrong	1. Cables from the source for proper connections, for example, y to y 2. HUE in O.S.D.
	The picture appears not to sync up or the O.S.D. displays "No Video Source"	1. Cables from the source for proper connections, for example, y to y
	Will not accept interlace-style input.	1. This input will not accept interlace-style input. Use YPbPr1.
Special Modes	RS232C interface is not functioning	1. Refer to Appendix C (page 30) for all information

Service and Support

Rosen Aviation Displays, LLC
www.rosenaviation.com
PH: (541) 434-4512

Packaging and Shipping

Please repack your unit in the same fashion as it was originally packed into the shipping container. Please include all parts of your unit so that the unit can be fully repaired, tested and returned to you in good working order. The sender is responsible for damage to displays that are not properly packaged for shipment. See Appendix A (page 20) for illustration/instruction on how to package the unit for shipment in its original shipping container. Consult your dealer or the authorized factory service center with any questions.

APPENDIX A: PACKING FOR SHIPMENT
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

Shipping Procedure for 42" HD Gas Plasma Display
In the event that the 42" display needs to be shipped, the following procedures must be followed to protect it from damage. Rosen Aviation Displays, LLC is **NOT Responsible** for damage to equipment not packaged according to the guidelines listed below. Customer is responsible for freight charges back to the factory for warranty repair. Factory will pay return freight via ground service.

Note: Save all packaging in case the display must be shipped.

1. Locate the original corrugated shipping container, foam cushions, wooden pallet and reusable straps. If the original shipping materials are not available, contact Rosen Aviation Displays, LLC for information regarding the purchase of replacement shipping packaging.

2. Ensure that the box is on the pallet as shown in Figure A.1.

3. Place bottom foam cushion in sides and bottom of box, noting orientation of notch as shown in Figure A.1.

4. Wrap the display in the pink polyethylene plastic sheet to protect the painted surfaces and glass front filter from damage during shipment.

5. Place the wrapped display into the box and insert the other foam cushion over the top edge of display.

6. Seal the box lid with packaging tape.

7. Secure the outer box to the pallet with two polypropylene straps and buckles as shown in Figure A.1.

8. Place FRAGILE labels on all four sides and the top of the outer box.

APPENDIX A: PACKING FOR SHIPMENT
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

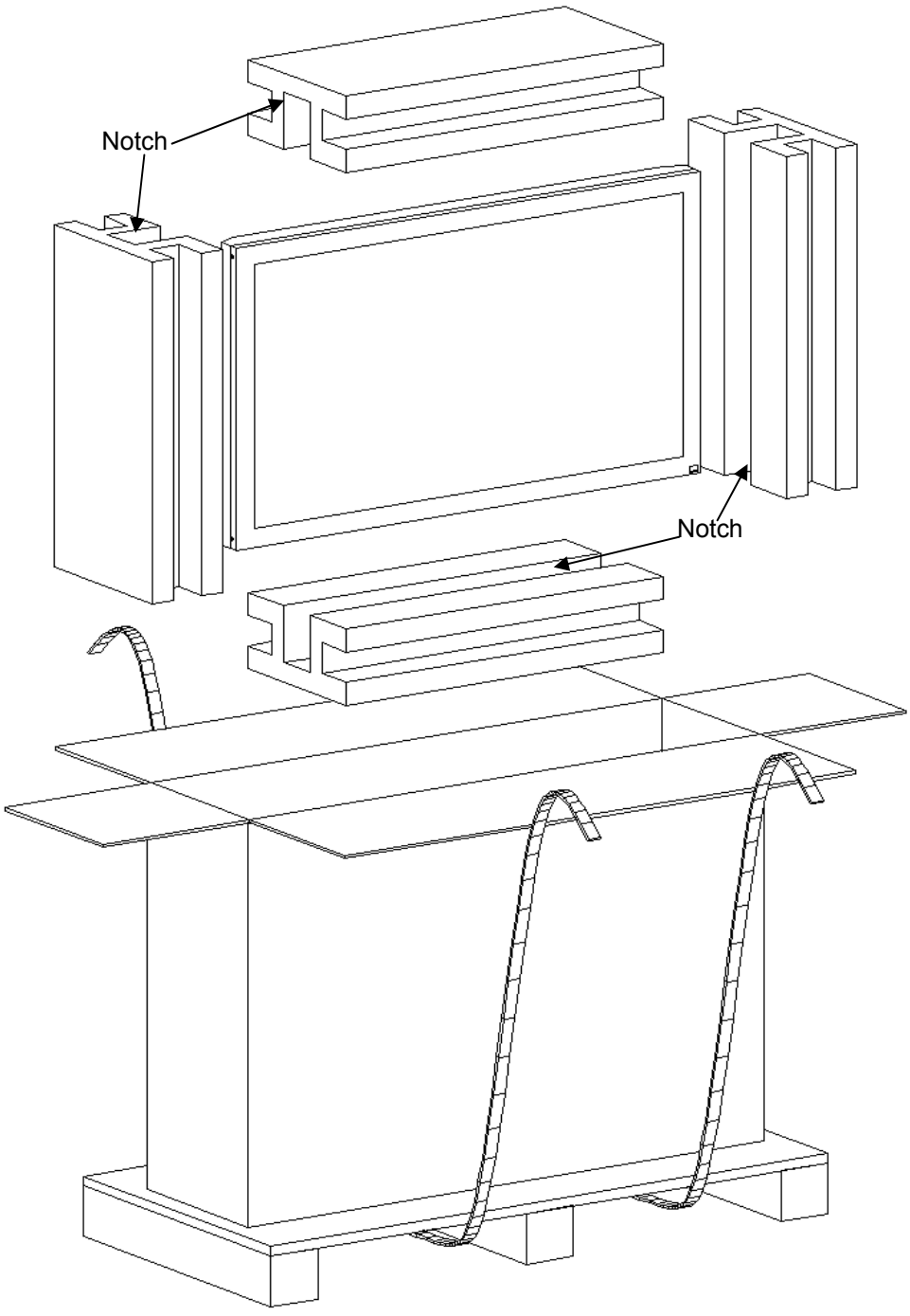


Figure A.1

APPENDIX B: REMOTE CONTROL OPERATION OVERVIEW
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

The standard remote control system for the 42" HD gas plasma display is described in this appendix.

The standard system has many user settings, which can be saved to non-volatile system memory for the user's convenience. This allows the user to set up the system once and restore their settings after the power has been shut off. User settings are restored from non-volatile memory during the following conditions:

- Toggling the display out of stand-by mode
- Switching input sources
- Selecting exit with cancel from the OSD menu system
- Entering the cancel command from the RS232 terminal interface

Control settings via the hand-held IR remote control unit or a RS232 terminal connection.

Infrared (IR) Universal Remote Control
IR button description

The IR remote control operates from 12 buttons described below. These buttons allow display control by navigating through the OSD menu system and selecting the many functions:

- *Power* = toggles the display in and out of stand-by mode
- *Up* & *Down* moves the active row respectively
- *Left* & *Right* manipulates or performs the action of the menu item selected by the active row
- *0 to 9* are used to directly switch to selected inputs or menus
- *MENU* toggles the OSD visibility

Essentially any IR remote control with the button options listed above that can be programmed (including programming through a learn mode) can be used.

Some examples of IR's that have been used with 42" HD gas plasma display products are:

- Allegro (Zenith) MBC 4030/4035/4430/4435
- RCA SystemLink 5AV
- Home Theater Master (Universal Remote Control, Inc.) SL-9000, SL-8000
- Universal Electronics URC-8080 "A/V Producer", URC-3030 "One For All"
- Bose *Life Style 35* IR Remote Control System

The above examples are neither recommendations nor representations of full evaluations for them. The standard IR provided with the 42" HD gas plasma display is factory preprogrammed and integrated for specific performance criteria (see Appendix D – Specifications on page 38).

APPENDIX B: REMOTE CONTROL OPERATION OVERVIEW
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

SL8000 Home Theater Remote Control

To Program the Remote control for operation with the 42HD Video Display, follow the steps below.

1. Press and hold the TV and the Mute buttons at the same time until the display on the remote control say SET.
2. Enter in one of the following codes.

IR Code Switch Setting	Code
1	004
2	138
3	019

3. Press the TV button to save the set up.

See the IR Code Switch location in Figure 2, on page 7.
Find additional IR information under *Operator Controls and Indicators*, on page 10.

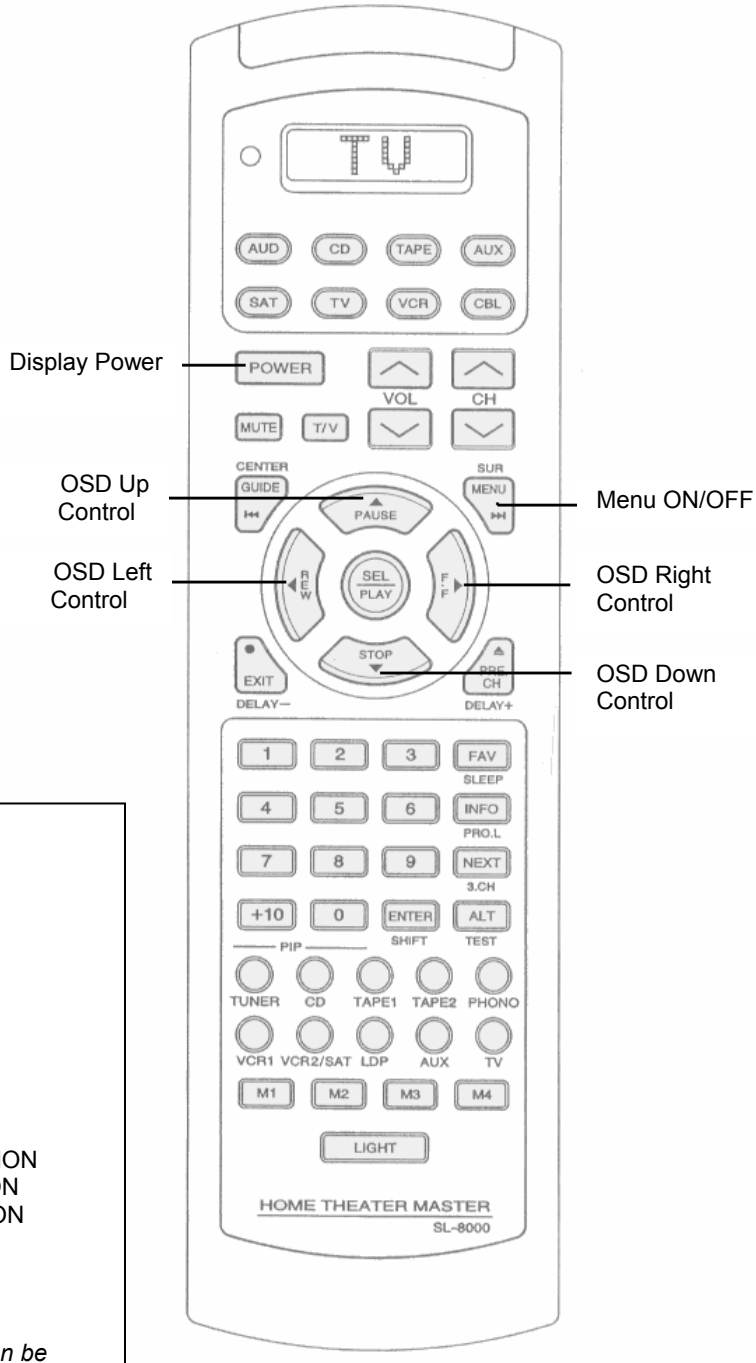


Figure C.1 SL8000 Remote

SL-8000 IR Remote Key	**42 HD Function**
POWER	Power ON/OFF
PAUSE	Cursor Up
F.F	Cursor Right
STOP	Cursor Down
REW	Cursor Left
MENU	OSD ON/OFF
1	YPbPr.1 SOURCE SELECTION
2	YPbPr.2 SOURCE SELECTION
3	S VIDEO SOURCE SELECTION
4	S VIDEO.A SOURCE SELECTION
5	ANALOG RGB SOURCE SELECTION
6	DIGITAL DVI SOURCE SELECTION
7	PIP TOGGLE SOURCE SELECTION
8	PIP SWAP
9	DIRECT IR MENU
0	POWER OFF

***Note**: These functions are the Factory Default and can be changed in the OSD menu system.*

APPENDIX B: REMOTE CONTROL OPERATION OVERVIEW
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

IR Remote Control Keycodes

- Keycodes correspond to NEC IR protocol
- Only the codes to which the display responds are listed
- Program Code corresponds to the One For All, RCA or Allegro programming code
- Names next to the program code are manufacturers which commonly use this code set

KEY / FUNCTION	42 HD FUNCTION	IR REMOTE SELECT SWITCH DOWN (1)		IR REMOTE SELECT SWITCH MIDDLE (2)		IR REMOTE SELECT SWITCH UP (3)	
Manufacturer	N/A	HT Master	One 4 All RCA Allegro	HT Master	One 4 All RCA Allegro	HT Master	One 4 All RCA Allegro
Program Code (OFA, RCA, Allegro)	N/A	004	0186 033 139	138	0027 009 114	019	0021 008 NONE
Control Code	N/A	$20DF	$A857	$02FD	$04FB	$14EB	$08F7
Power	Power ON/OFF	$10	$48	$48	$88	$D0	$88
Channel Up	Cursor Up	$60	$38	$41	$68	$78	$68
Volume +	Cursor Right	$30	$68	$98	$48	$F8	$48
Channel Down	Cursor Down	$E0	$B8	$C1	$58	$B8	$58
Volume -	Cursor Left	$B0	$E8	$B8	$50	$38	$50
0	DIR. IR 0	$08	$D0	$00	$10	$90	$10
1	DIR. IR 1	$98	$80	$80	$00	$00	$00
2	DIR. IR 2	$48	$40	$40	$40	$80	$40
3	DIR. IR 3	$C8	$C0	$C0	$C0	$40	$C0
4	DIR. IR 4	$28	$20	$20	$A8	$C0	$A8
5	DIR. IR 5	$A8	$A0	$A0	$98	$20	$98
6	DIR. IR 6	$68	$60	$60	$D0	$A0	$D0
7	DIR. IR 7	$E8	$E0	$E0	$28	$60	$28
8	DIR. IR 8	$18	$10	$10	$18	$E0	$18
9	DIR. IR 9	$98	$90	$90	$C8	$10	$C8
Recall or Menu	OSD ON/OFF	$C2	$88	$01	$E0	$D8	$E0

APPENDIX B: REMOTE CONTROL OPERATION OVERVIEW
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

Menus and RS232 Commands for the HD Digital Video Controller

General Description

The extensive menu and RS232 control system that has been built into the HD digital video controller (HD DVC) has been designed for simple navigation, user friendliness, and application diversity. At the same time, it provides the most exhaustive submenu system available for application fine-tuning of the displayed video signal. Menus are described in full detail in Appendix C (page 30).

To bring up the menu system, press MENU on the remote control while in the TV mode. To move through the menus, use the up arrow (pause), right arrow (FF), left arrow (REW), and the down arrow (STOP) on the remote. To turn the menu off, either wait for the time out or press MENU again.

Menus will appear similar to those stated below, however once sources are connected and the application varies the settings, these menus might appear slightly different. These differences will be noted throughout the text of this document.

Definitions

- Menu selections with an arrow to their right only will take you to a lower level menu; excluding the Restore Factory Settings selection
- The icon that resembles a sun indicates brightness options
- The icon that resembles a moon indicates contrast options
- Hue is the tint of the colors on the displayed input
- Color is defined as the amount of the displayed video's color saturation

NOTE: No settings are saved until SAVE is manually selected from within the menu. If settings are changed and not saved, the next power up will return the unit to it's previously saved parameters.

APPENDIX B: REMOTE CONTROL OPERATION OVERVIEW
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

RS232 Control

The following chart describes the RS232 commands. The commands must be followed by a carriage return <CR>. Some commands require values to be entered such as Brightness. These values are to be entered in as hexadecimal ASCII with leading zeros when necessary. For example, brt0A<CR> requests a brightness value of decimal 10. Refer to the Comments column for more details regarding a particular command.

***Note**: The range of values for FlexiScreen commands vary depending upon the input source. Improper settings may cause loss of sync to the input. Syntax is case sensitive. To retain adjusted settings, select SAVE before shutting off power. See the RS232 setup section for cable configuration and terminal set up information.*

Table C1: Video Board HC12 Software RS232 Command Set

SYSTEM COMMANDS	SYNTAX	COMMENTS
Power Toggle	pwr<CR>	
Power ON	pwr1<CR>	
Power OFF	pwr0<CR>	
Version Display	ver<CR>	
Repeat Last Command	<CR>	
Save Settings To Memory	save<CR>	necessary to make any changes permanent
Cancel Changes	cancel<CR>	restores last saved settings
IR Control Lock Out	irX<CR>	where X = {0 = OFF, 1 = ON}, Default of OFF will return upon cold power up
Instant On Enable	ioeX<CR>	where X = {0 = OFF, 1 = ON}, how unit will respond upon cold power up
Freeze Input Enable	frzX<CR>	where X = {0 = OFF, 1 = ON}
Restore Factory Defaults	fact<CR>	
Clear Terminal Screen	clr<CR>	
Display Data In Hexadecimal	hex<CR>	data displayed such as in device register dumps will be displayed accordingly
Display Data In Decimal	dec<CR>	data displayed such as in device register dumps will be displayed accordingly
FlexiScreen COMMANDS	**SYNTAX**	**COMMENTS**
Display Aperture Selection	dapX<CR>	where X is a 1 byte ASCII hex value (8 bit), range {x0…x3}
Source Aperture Selection	sapX<CR>	where X is a 1 byte ASCII hex value (8 bit), range {x0…x7}
Source Aperture Width	swiXXXX<CR>	where XXXX is 4 byte ASCII hex value (16 bit),
		custom range {x0001…(dependent upon input source)}
Source Aperture Height	shtXXXX<CR>	where XXXX is 4 byte ASCII hex value (16 bit),
		custom range {x0001…(dependent upon input source)}
Source Aperture Horizontal Position	shpXXXX<CR>	where XXXX is 4 byte ASCII hex value (16 bit),
		custom range {x0001…(dependent upon input source)}
Source Aperture Vertical Position	svpXXXX<CR>	where XXXX is 4 byte ASCII hex value (16 bit),
		custom range {x0001…(dependent upon input source)}

APPENDIX B: REMOTE CONTROL OPERATION OVERVIEW
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

Main Display Commands	SYNTAX	COMMENTS
Source Selection	srcX<CR>	where X = 0 Analog RGB Input (HDTV) 1 YPbPr.2 Input (HDTV) 2 DVI Input 3 Composite, TV Tuner Option 4 Composite, Video bundle, yellow 5 Composite, Video bundle, red 6 Composite, Video bundle, white 7 YPbPr.1 (analog), Video bundle 8 S-Video, fixed mini DIN 9 S-Video, Video bundle
Brightness	brtXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…x64}
Contrast	conXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…x64}
Hue	hueXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…x64}
Color Saturation	satXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…x64}
Red Magnitude For RGB Inputs	redXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…x64}
Blue Magnitude For RGB Inputs	bluXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…x64}
Green Magnitude For RGB Inputs	grnXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…x64}
Sharpness, Fine	shrpXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…x0F}
Sharpness, Coarse	shrpcXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…x0A}
Panel Brightness	pbrtXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…xFF}
Input Color Space Selection	cscX<CR>	where X = {0 = RGB, 1 = YUV SD, 2 = YUV HD}
Input Select Notification	isnX<CR>	where X = {0 = OFF, 1 = ON}, When enabled, "SEL n" is sent to the serial port. Refer to the Hex Value table below for a complete listing of "n".
Color Gamma Value	gamCXX<CR>	where C = {r,g, or b} and XX = ASCII hexadecimal value, range {x00…x14}
Color Gamma Scale Factor	gsfCXX<CR>	where C = {r,g, or b} and XX = ASCII hexadecimal value, range {x00…x64}
Analog RGB And Yprpb.2 Only	**SYNTAX**	**COMMENTS**
Red Gain Adjustment	anrXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…xFF}
Blue Gain Adjustment	anbXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…xFF}
Green Gain Adjustment	angXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…xFF}
Red Offset Adjustment	redoXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…x7F}
Blue Offset Adjustment	bluoXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…x7F}
Green Offset Adjustment	grnoXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…x7F}
Clock Phase	phsXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…xFF}
Clock Frequency Pll	clkXXXX<CR>	where XXXX is 4 byte ASCII hex value (16 bit), range {x0001…x0FFF}
Clamp Position	clpXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…xFF}
Clamp Width	clpwXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…xFF}
Sync On Green Threshold	sogXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…x1F}
Sync Separator Threshold	sstXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…xFF}
Pre-Coast Setting	prcXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…xFF}
Post-Coast Setting	pocXX<CR>	where XX is 2 byte ASCII hex value (8 bit), range {x00…xFF}
HDTV Input Enable	hdtvX<CR>	where X = {0 = OFF, 1 = ON}
Automatic Gain Control	agcX<CR>	where X = {0 = OFF, 1 = ON}

APPENDIX B: REMOTE CONTROL OPERATION OVERVIEW
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

PIP COMMANDS	SYNTAX	COMMENTS
PIP Window Enable Toggle	pip<CR>	
PIP Window Enable	pipX<CR>	where X = {0 = OFF, 1 = ON}
PIP Source Selection	psrcX<CR>	where X = {0 - 9}, Refer to the Hex Value table below for a complete listing of "X".
PIP Side By Side Enable	pssX<CR>	where X = {0 = OFF, 1 = ON}
PIP Swap With Main Image	pswp<CR>	
Pip Input Color Space Selection	pcscX<CR>	where X = {0 = RGB, 1 = YUV SD, 2 = YUV HD}

OSM COMMANDS	SYNTAX	COMMENTS
OSM Ctrl: UP	<ESC>OA	same as pressing UP arrow key on keyboard or IR
OSM Ctrl: DOWN	<ESC>OB	same as pressing DOWN arrow key on keyboard or IR
OSM Ctrl: RIGHT	<ESC>OC	same as pressing RIGHT arrow key on keyboard or IR
OSM Ctrl: LEFT	<ESC>OD	same as pressing LEFT arrow key on keyboard or IR
OSM Display/Hide Toggle	menu<CR>	same as pressing MENU on IR
Refresh OSD	rm<CR>	
Osm Background Enable	obeX<CR>	where X = {0 = OFF, 1 = ON}

RS232 Setup Information

You will find the outline drawing for the RS232 cable on page 29.

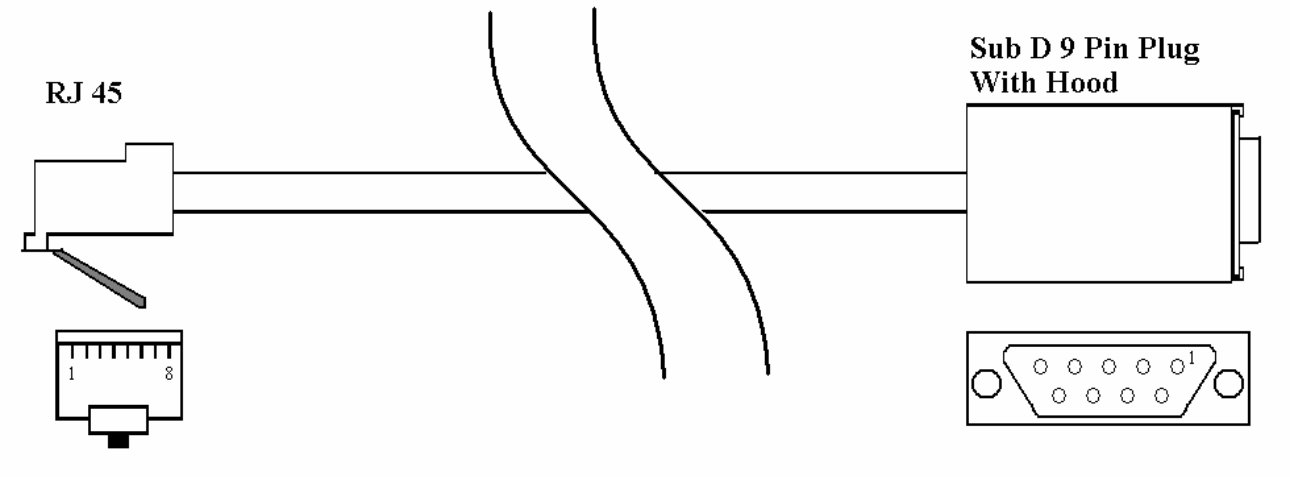
The communications port requires the following set up and parameters:
38.4KB, 8 bit, 1 stop bit, no parity, no handshake.

If you are emulating a terminal:

- VT100 is recommended
- ASCII Sending: Carriage Return only on enter. Do NOT include line feed
- ASCII Receiving: Append line feeds to incoming line ends

APPENDIX B: REMOTE CONTROL OPERATION OVERVIEW
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

Outline Drawing, RJ45 to Sub D RS232 cable



25 feet

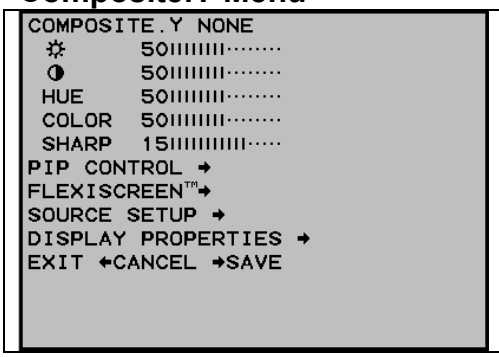
RJ45	COLOR	DESCRIPTION	SUB D 9 PIN
1	Blue	DSR (in)	6
2	Blue/white	DTR (out)	4
3	Orange	RD (data in)	3
4	Orange/white	GND	5
5	Green	TD (data out)	2
6	Green/white	GND	5
7	Brown	CTS (in)	8
8	Brown/white	RTS (out)	7
		No connection	1

Recommended Parts

QTY	MANUFACTURER	PART NUMBER	DESCRIPTION
1	Amp	5-554720-3	Connector,Male,RJ45, crimp, round cable, 8 position
1	Amp	207826-3	Connector, Female, Sub D 9 pin, solder cup
1	Amp	17-1724-1	Hood
25 ft	Belden	1229A1	Cable, 4 twisted pair, Cat 5, solid 24 awg

APPENDIX C: OSD MENU STRUCTURE & COMMANDS
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

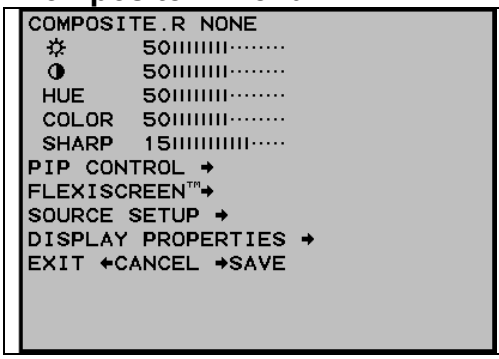
Composite.Y Menu



This menu is for Composite.Y input. It is the yellow RCA female connector in the video bundle, thereby the "Y". "NONE" in the top line could be replaced with NTSC or PAL, dependant on the received signal from the composite signal's connected source. This signal has to be Baseband and not a modulated signal such as on channel 3.

Use the up or down arrows to select and change settings from the factory default.

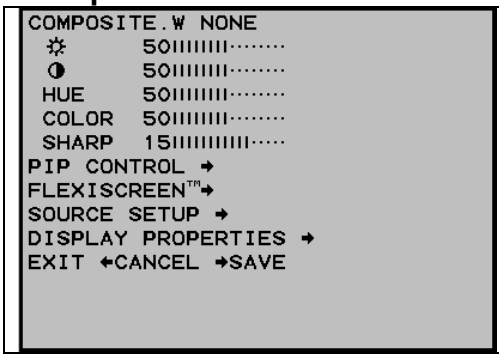
Composite.R Menu



This menu is for Composite.R input. It is the red, RCA female connector in the video bundle, thereby the "R". "NONE" in the top line could be replaced with NTSC or PAL, dependant on the received signal from the composite signal's connected source. This signal has to be Baseband and not a modulated signal such as on channel 3.

Use the up or down arrows to select and change settings from the factory default.

Composite.W Menu



This menu is for Composite.W input. It is the white, RCA female connector in the video bundle, thereby the "W". "NONE" in the top line could be replaced with NTSC or PAL, dependant on the received signal from the composite signal's connected source. This signal has to be Baseband and not a modulated signal such as on channel 3.

Use the up or down arrows to select and change settings from the factory default.

APPENDIX C: OSD MENU STRUCTURE & COMMANDS
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

Composite Source Setup menu

This menu is common to all composite sources. Any changes here will vary the input source settings for all composite inputs. The active menu items are brightness, contrast, hue, color, and sharpness. **The CAV items are for a different input. Do not adjust the CAV items while in the composite mode.**

See the YPbPr.1 menu on page 33.

Use the up or down arrows to select and change settings from the factory default.

S Video Menu

There are 2 S-Video inputs to the HD DVC. One is direct to the HD DVC and the other is via the video bundle.

The S-Video input is to control the S-Video input directly to the HD DVC. "NONE" in the top line could be replaced with NTSC or PAL, dependant on the received signal from the composite signal's connected source.

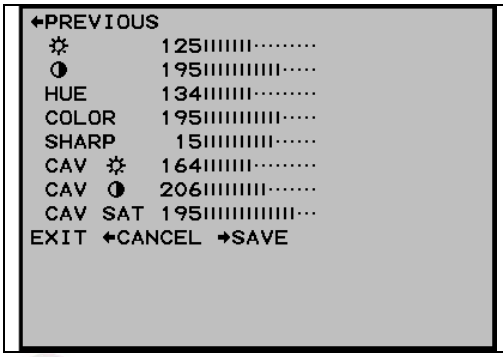
Use the up or down arrows to select and change settings from the factory default.

S Video.A Menu

The S-Video input is to control the S-Video input via the video bundle to the HD DVC. "NONE" in the top line could be replaced with NTSC or PAL, dependant on the received signal from the composite signal's connected source.

Use the up or down arrows to select and change settings from the factory default.

S Video and S Video.A Source Setup Menu



This source setup menu is NOT common to both S-Video inputs. Any changes you make while under the S-Video. An input affects only that input. Any changes made while under the S-Video input will affect only that input. Both of the S-Video inputs have this menu.

Use the up or down arrows to select and change settings from the factory default.

APPENDIX C: OSD MENU STRUCTURE & COMMANDS
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

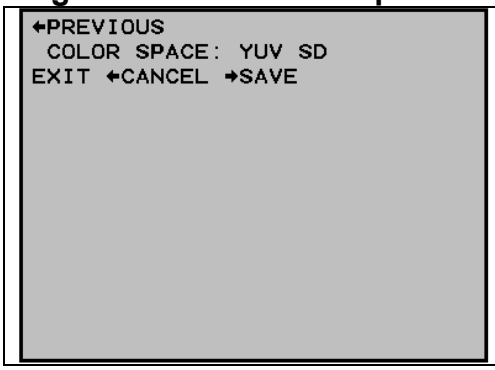
Digital DVI Menu

The digital DVI input is the highest quality input available. The reason for this quality is that the video signal is not an analog signal, which requires conversion to digital. Therefore the signal is coming from the source in digital format and is processed in the HD DVC as a digital signal and displayed in a digital format. The digital DVI connection to the HD DVC is shared with the analog RGB input. The application can use one or the other but never both at the same time.

The digital DVI input is to control the appearance of the digital DVI input. "NONE" on the first line will be replaced with the resolution being provided by the source. If changes are made here and the settings saved, a star (*) will appear next to the resolution indicating a saved setup.

Use the up or down arrows to select and change settings from the factory default.

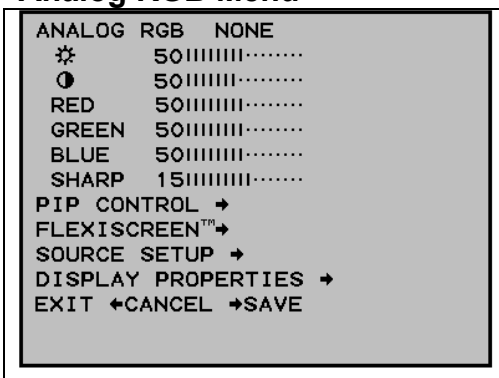
Digital DVI Source Setup Menu



The source setup menu for the digital DVI input provides only a color space control. RGB is the factory default based on the input. Other options are YUV SD and YUV HD.

Use the up or down arrows to select and change settings from the factory default.

Analog RGB Menu



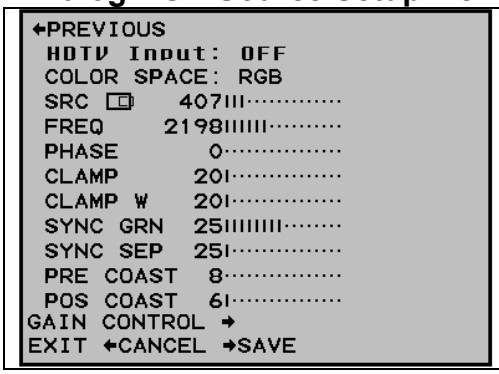
The analog RGB input is primarily used for computer generated graphics such as being used as a computer display.

The analog RGB input connection is shared with the digital DVI input connector. **The application can not have both connected at the same time.** The factory defaults provide the optimum display of analog RGB signals. However, the application can change them from the factory defaults for their specific preference.

Use the up or down arrows to select and change settings from the factory default.

APPENDIX C: OSD MENU STRUCTURE & COMMANDS
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

Analog RGB Source Setup Menu



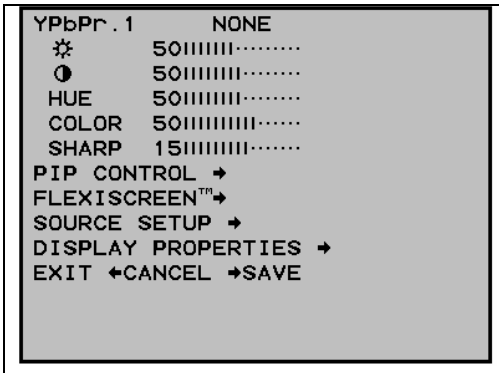
In the analog RGB mode, the HD DVC assigns the source setup values and it is not recommended that the application change these settings. However, the application can change them to provide for a shift in the display as necessary.

Use the up or down arrows to select and change settings from the factory default.

YPbPr (Component)

There are 2 separate YPbPr or component inputs. This type of input provides the best analog video signal.

YPbPr.1 Menu



The YPbPr.1 input uses the 3 RCA style connectors incorporated in the video bundle. This input is for use with any interlaced or non-interlaced source. Resolutions are from 480p/i to 1080i. See the standard resolutions section of this manual for a complete list of acceptable resolutions.
"None" on the menu's first line will be replaced by the resolution that has been detected. If a star (*) is next to the resolution, the settings have been changed in some way and saved.

Use the up or down arrows to select and change settings from the factory default.

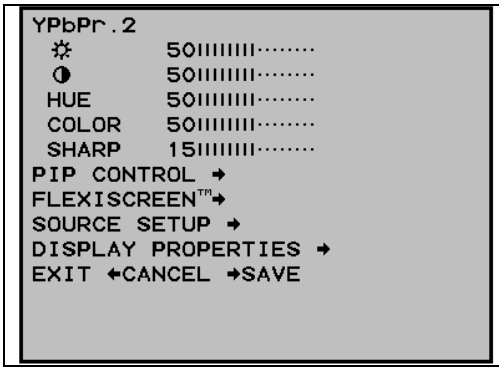
YPbPr.1 Source Setup Menu

The source setup for YPbPr.1 input look the same as the S-Video and the composite inputs but do not interact with each other. Each of them is separate so that the application can set up 2 totally different sources for these inputs. **The YPbPr.1 input uses only the CAV portion of this menu. There is no need to change the top 5 menu selections in that they have no effect on this input.**

Use the up or down arrows to select and change settings from the factory default.

APPENDIX C: OSD MENU STRUCTURE & COMMANDS
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

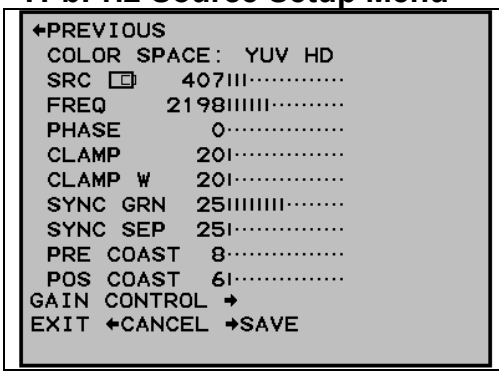
YPbPr.2 Menu



The YPbPr.2 input uses the 3 BNC-style connector on the HD DVC. You can supply a signal from 480p or 720p including 540p on this input. **This input will not accept the interlaced style input such as 1080i.** "None" on the menu's first line will be replaced by the resolution that has been detected. If a star (*) is next to the resolution, the settings have been changed in some way saved.

Use the up or down arrows to select and change settings from the factory default.

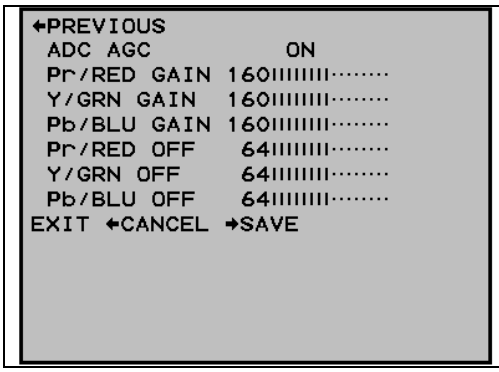
YPbPr.2 Source Setup Menu



The source setup for YPbPr.2 input looks the same as the analog RGB input, but does not interact with it. Each of them is separate so that the application can set up 2 totally different sources for these inputs. The color space can be set to YUV HD, YUV SD, or RGB. The system will detect what is best and the application should not have to change the setting.

Use the up or down arrows to select and change settings from the factory default.

Gain Control Menu



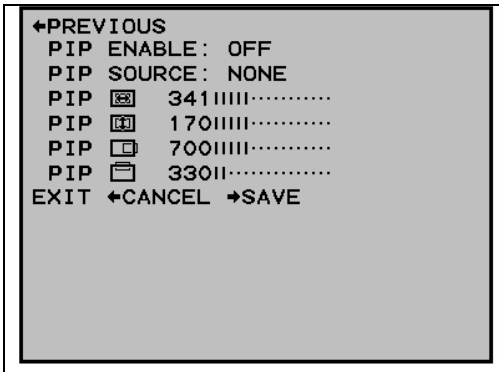
Use the Gain control menu to adjust the input gain only if the automatic functions are not satisfactory to the end application. In most cases, the application should not have to interact with this menu.

Use the up or down arrows to select and change settings from the factory default.

APPENDIX C: OSD MENU STRUCTURE & COMMANDS
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

PIP Control Menu

The Picture in Picture (PIP) control menu allows full flexibility in viewing 2 sources at the same time. Keep in mind some limitations were noted under PIP Modes in the main text.

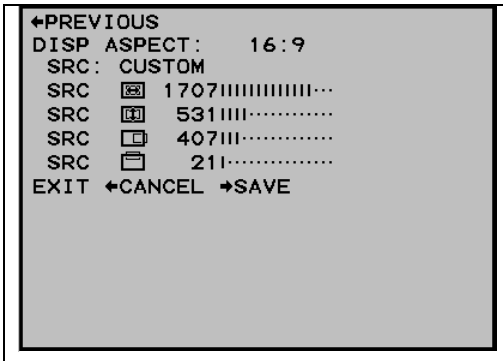


Choose a viewing source, such as S-Video, and then move to enable and turn it on.
The PIP window appears. Position it as desired on the screen and/or adjust the size. It is possible to shape the picture by increasing only one dimension of the window such as increasing the horizontal size and not increasing the vertical size. If the application changes the main screen source, the PIP settings will not be saved. The only exception to this is when a user invokes a PIP SWAP using the direct IR key code or the RS232 command.

Use the up or down arrows to select and change settings from the factory default.

FlexiScreen™ Menu

FlexiScreen™ is applicable to all input menus during a valid source. The FlexiScreen™ format refers to the active picture size and position on the screen.



The FlexiScreen™ menu allows the application to adjust the screen size so that the images fit the entire screen or even go beyond the screen.

All of these attributes of the screen can be varied. The ASPECT can be set to 16:9, 4:3 or 1:1. The source (SRC) can be set to any number of preset dimensions or can be set to custom as is indicated here.

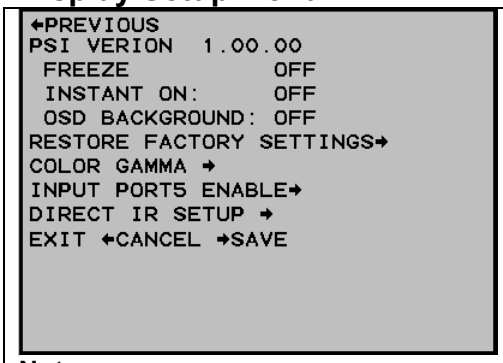
If any of the dimensioning selections are changed, the SRC automatically changes to custom. Below and left is a list of preset SRC dimension names.

Use the up or down arrows to select and change settings from the factory default.

Preset SRC Formats:	
Acadamy	Open Matte
Super 35	VistaVision
Panavision	Panavision
Technorama	Custom

APPENDIX C: OSD MENU STRUCTURE & COMMANDS
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

Display Setup Menu



Note:
PSI VERSION is for documentation reference only and cannot be changed.

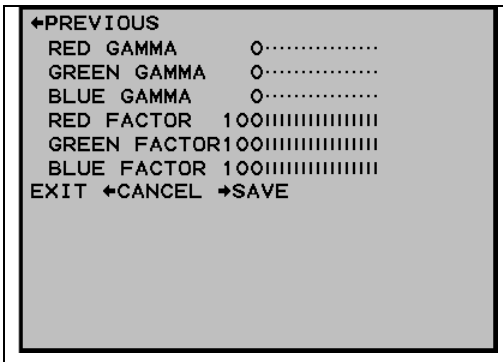
Use the display setup menu to customize the way the display system functions.

FREEZE, INSTANT ON, and OSD BACKGROUND can either be set to ON or OFF.

RESTORE FACTORY SETTINGS: All parameters stored in the unit will be replaced, and any setup that has been saved will be erased and replaced.

The rest of the options in this menu are sub menus discussed in the tables below.

Color Gamma Menu

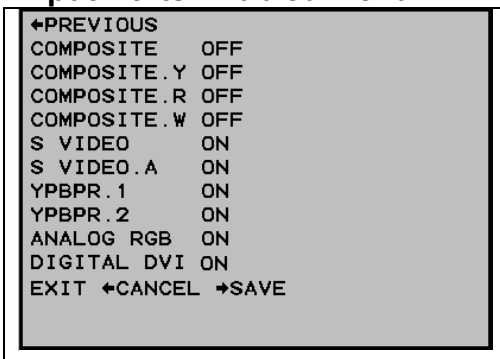


The color gamma menu is used to adjust color temperature. Adjustments in this menu are complicated because of interrelationships with other menus.

The red, green and blue gamma settings independently vary the shapes of their gamma curves. The red, green, and blue factors vary the maximum levels of the respective colors.

Use the up or down arrows to select and change settings from the factory default.

Input Ports Enabled Menu

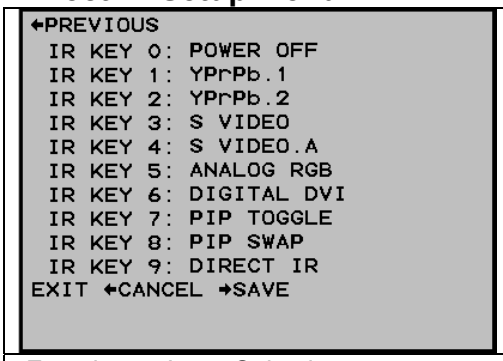


Use this menu to turn any particular input on or off. Some of the inputs can not be used simultaneously with others. For example, YPbPr.1 with composite inputs Y, R, or W.
All inputs can either be ON or OFF. If the input is off, the unit will not display any menus for that input.
If the application turns an input off and the unit is currently displaying that input, the change will not take effect until the application changes to another input for viewing.

Use the up or down arrows to select and change settings from the factory default.

APPENDIX C: OSD MENU STRUCTURE & COMMANDS
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

Direct IR Setup Menu


←PREVIOUS
IR KEY 0: POWER OFF
IR KEY 1: YPrPb.1
IR KEY 2: YPrPb.2
IR KEY 3: S VIDEO
IR KEY 4: S VIDEO.A
IR KEY 5: ANALOG RGB
IR KEY 6: DIGITAL DVI
IR KEY 7: PIP TOGGLE
IR KEY 8: PIP SWAP
IR KEY 9: DIRECT IR
EXIT ←CANCEL →SAVE

Use this menu to setup one touch direct access to a menu, or selection of an input, or discrete power on/off.

Each of the number keys, (0–9) can be set to do any function listed below left.

These functions make it easier for the application to switch functions without going through the menus.

Use the right and left arrow to scroll through choices.

Use the up or down arrows to select and change settings from the factory default.

Function or Input Selections:	
Power off	Power on
freeze	direct IR
Disp Prop	Ports
Gamma	None
Analog RGB	Digital DVI
Composite	Composite.Y
Composite.R	Composite.W
YPbPr.1	YPbPr.2
S Video	S Video.A
PIP Toggle	PIP Swap
Flexiscreen™.	

APPENDIX D: CONFIGURATION AND PERFORMANCE OVERVIEW
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

Specifications

Screen Size	42” diagonal; 36.3” (w) x 20.6” (h)
Resolution	1024(h) x 1024(v) color pixels
Size	39.5”(w) x 23.8”(h) x 3.25”(d)
Pixel pitch	0.90mm x 0.51mm
Viewing Angle	160 degrees omnidirectional
Color Depth	16.77 million video colors

User Interfaces

STV Inputs	(NTSC, PAL): Component, S-Video, Composite (Cvs)
PC Inputs	(Analog RGB and DVI): VGA, WVGA, 480p, XGA, WXGA, SVGA, 720p (60HZ)
HDTV Inputs	480p, 720p, 1080i/540p
User Controls	Hand held IR remote control to OSD, RS-232

PIP (Multiple Scenario)

Scenarios	HDTV with STV or PC STV with HDTV or PC PC with STV or HDTV
Adjustments	Zoom, Pan and Transparency Picture by Picture

Real Time Digital Signal Processing

Line Doubler	Motion Adaptive Deinterlacing 3:2/2:2 Pull Down
Scaler	Linear and Anamorphic
Filters	2/4 Comb, Anti-flicker, Sharpness

Electrical and Environmental

AC Power	85 to 264 VAC 400 Hz 3 A average @ 110 VAC
Temperature	-20 to +70 C non-operating -5 to +50 C operating
Moisture	20% to 90% RH Non-condensing
EMC	FCC Part 15 Compliance Broadband IR compatible
Safety	CSA/UL-1950 Compliance
Shock	20 G x 11ms in x,y 10 G x 11ms in z
Vibration	10 to 55 Hz, 2 G peak in x,y 1 G peak in z
Altitude	9,500 feet, nominal

APPENDIX D: CONFIGURATION AND PERFORMANCE OVERVIEW
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

Mechanical
All metal packaging
Textured black exterior paint

Notes to Specifications:

Corrosive Environments:

Non-operating unit exteriors – do not expose for prolonged periods to ocean spray, rain or moisture.
Unit interiors – do not allow water or other liquids inside the units under any conditions.
Operating unit exteriors – do not expose to ocean spray, rain or moisture.

Dust:

Unit interiors – do not allow dust to be blown or drawn into the units.
Unit exteriors – do not clean off dust with solvents stronger than Isopropyl Alcohol.

APPENDIX E: Definition of Terms
Rosen Aviation Displays, LLC, 42" HD Gas Plasma Display Technical Manual

HD	High Definition
HDTV	High Definition Television
DVD	Digital Versatile Disk
OSD	On Screen Display
IR	Infrared Universal Remote Control
PIP	Picture In Picture
RGBHV	Red Green Blue Horizontal Vertical
VESA	Video Electronics Standards Association
HD-DSS	High Definition Digital Satellite Service
FCC	Federal Communications Committee
CE	Conformity European
CSA	Canadian Standards Association
UL	Underwriter's Laboratory
DVI	Digital Visual Interface
VGA	Video Graphics Adapter
YPrPb	Component Video
CAV	Component Analog Video

WARRANTY EXCLUSIONS

No other warranty is expressed or implied, as to the product purchased, and under no circumstances shall the manufacturer or manufacturer's representatives be liable for any liability, claim, loss, damage, expense or injury of any nature, or any direct, indirect, special, incidental, or consequential damages however caused and on any theory of liability in connection with or resulting from the resale or use of the products.

No other warranties, whether express, implied or statutory, are made or created by the purchase of the product; the implied warranties of merchantability and/or fitness for a particular purpose are expressly excluded.

As applicable, the reseller, the installer, and the user agree to indemnify and hold the manufacturer and its representatives harmless from any claim arising for any warranty assumed, made or implied by the reseller, the installer, or the user to the extent that it exceeds or differs from the warranty offered herein.

The maximum liability of the manufacturer and its representatives to any person or entity arising out of or in connection with any sale or use of the products, whether such liability arises from any claim based upon contract, warranty, tort or otherwise, shall in no case exceed the actual amount paid for the products, for value as delivered to their respective distribution tiers. In no event will the original manufacturer be liable for costs of procurement of substitute goods or services.

Product warranty will be void and null when products are subjected to corrosion or other excesses of the product specifications, shipped in non-qualified containers, any markings are altered, obliterated or removed, or any unauthorized disassembly and reassembly/integration of product occurs. Removal of the front bezel is strictly prohibited. Mounting the unit in any orientation with installer/user supplied mounting hardware is totally the installer/user's responsibility and liability.

OUTLINE DRAWINGS

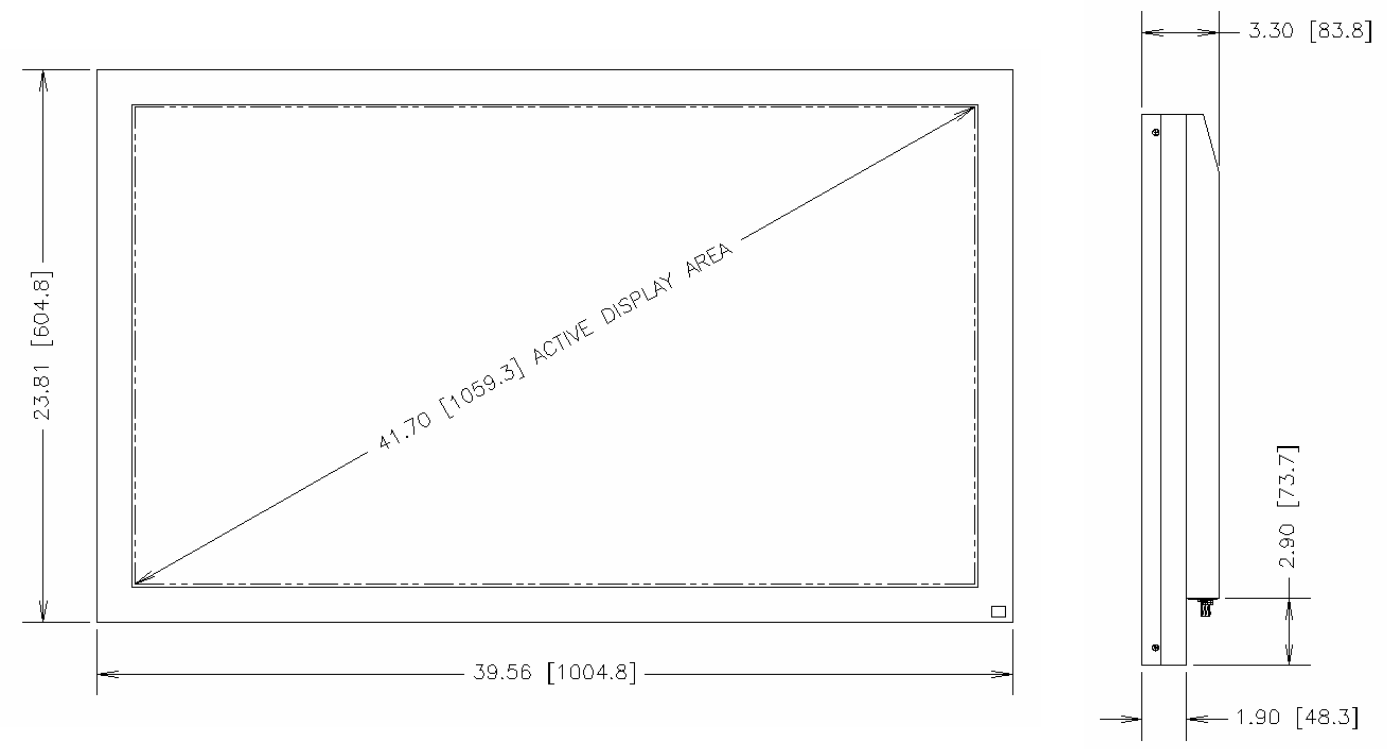
Scope
The following drawing established the package outline of the 42" HD Gas Plasma Display.

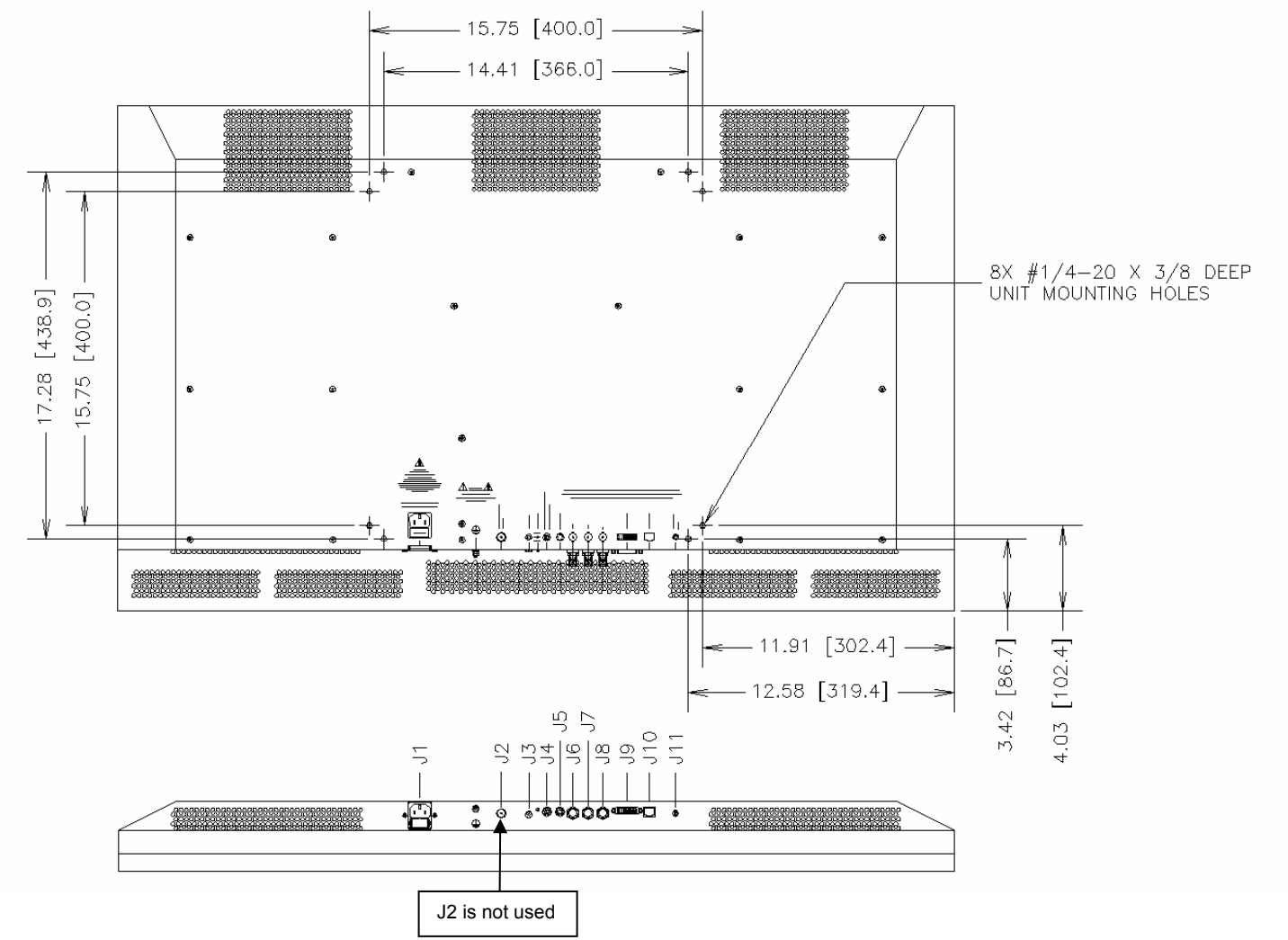
General
Interpret this drawing in accordance with MIL-STD-100.
All dimensions are in inches followed by the equivalent in millimeters placed in brackets [mm]. Do not scale this drawing.

Configuration
- **Power Input**: 115V AC via J1
- **Data Inputs**:
  - Optional NTSC Antenna Input via J2
  - S-Video Input via J5
  - Component Video via J6, J7, J8
  - Digital Video + Analog RGB Input via J9
  - Serial Data via J10
  - S-Video + Component Analog Video, or 3X Composite Video via J4, using Video Bundle Cable
- **Outputs**:
  - Optional DC Power Output via J11
  - Optional IR Remote Output via J1
- **Standard Case Color**: Black

Mounting Requirements
Mount Unit with # 1/4 x 20 with Threaded Holes on Rear of Unit.
Allow at Least One Inch Clearance Above and Below the Unit for Ventilation.

SYM	TYPE	FUNCTION
J1	IEC-320	AC Power Input
J2	F-Connector	Unused
J3	Stereo Phone Jack	IR Remote Out (optional)
J4	8-Pin DIN	S-Video (2) / CAV (2). CVS (1) (2) (3)
J5	4-Pin DIN	S-Video
J6	BNC	Pb
J7	BNC	Pr
J8	BNC	Y
J9	DVI	DVI/RGB
J10	RJ-45	RS-232
J11	2mm Power Jack	12V DC Out (optional)


23.81 [604.8]
41.70 [1059.3] ACTIVE DISPLAY AREA
39.56 [1004.8]
3.30 [83.8]
2.90 [73.7]
1.90 [48.3]


15.75 [400.0]
14.41 [366.0]
8X #1/4-20 X 3/8 DEEP
UNIT MOUNTING HOLES
17.28 [438.9]
15.75 [400.0]
11.91 [302.4]
12.58 [319.4]
3.42 [86.7]
4.03 [102.4]
J1
J2
J3
J4
J5
J6
J7
J8
J9
J10
J11
J2 is not used

Rosen Aviation Displays, LLC
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